

*Application No. 10/035,377
Amndt. dated: December 5, 2005
Reply to Office Action mailed: Sept. 8, 2005*

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (currently amended) A method of controlling a network boot for a plurality of client devices linked to a data communications network including a linked server and a network storage device, comprising:

receiving at the network server a boot request from one of the client devices over the network;

responsive to the received boot request, determining a target boot volume from a plurality of client image copies stored at the network storage device, each of the client image copies including a boot image particular to one of the client devices linked to the network; and

providing communicative access to the requesting one of the client devices to the target boot volume, whereby the client is operable to remotely boot over the network from the target boot volume stored at said network storage device.

2. (original) The method of Claim 1, further including creating a snapshot of a base boot image and creating the client image copies by copying the snapshot for each of the client devices linked to the network.

3. (original) The method of Claim 2, wherein the base boot image includes an image of operating system and application files to be shared among the client devices.

4. (original) The method of Claim 2, wherein each of the client image copies is allocated to a particular one of the client devices and includes common operating system (OS) and application blocks comprising a reverse snapshot of the base boot image and client-specific blocks unique to the particular one of the client devices.

5. (original) The method of Claim 4, further including receiving an update from a client device over the network and modifying the client-specific blocks based on the received update in the client image copy allocated to the updating client device.

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6. (original) The method of Claim 5, wherein the received update comprises a write that is processed as an allocate-on-write.

7. (original) The method of Claim 2, further including storing the snapshot in the network storage device and adding a new one of the client devices to the network including repeating, with the previously stored snapshot, the creating of the client image copies for the new client device.

8. (original) The method of Claim 1, wherein the network is an Internet protocol (IP) based network.

9. (currently amended) An external storage controller for managing network booting within a storage communication network including a linked server and a network storage device, comprising:

a snapshot manager adapted for creating a snapshot of a base boot image, for storing the base boot image in a-said network linked storage device, for creating and storing in the network storage device a reverse snapshot based on the snapshot for client devices in the network to the storage device, and for allocating one of the reverse snapshots to each of the client devices as client-specific image copies; and

said server comprising an input and output server linked to the network receiving to receive a boot request from a client device broadcast on the network and responding to the boot request by providing remote access to a client-specific image copy stored in the network storage device allocated to the requesting client device to effect a boot operation by the client device without downloading said client-specific image copy.

10. (original) The controller of Claim 9, further including means for determining based on the boot request the client-specific image copy to provide the requesting client device access.

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11. (original) The controller of Claim 9, wherein the base boot image includes an operating system and application files image and wherein each of the client-specific reverse snapshots includes the operating system and application files image and a client-specific information portion.

12. (original) The controller of Claim 11, wherein the client-specific information is alterable during operation of the controller.

13. (original) The controller of Claim 12, wherein the snapshot manager is adapted to apply writes received from a particular client device by the input and output server as writes to the client-specific information portion of a client-specific image copy allocated to the particular client device.

14. (currently amended) A computer system for deploying multiple client devices communicatively linked to a network including a linked server and a network storage component, comprising:

a plurality of client components that send boot requests over the network;
a snapshot component that creates a base boot image comprising an operating system and application files image and client image copies from the base boot image for each of the client components;

a pooled network storage component that to store[[s]] the client image copies; and said server including a communication component that receives the boot requests from the client components and provides the client components with remote access to the client image copies on the pooled network storage component, including access to effect a remote boot from a boot image copy allocated to the specific requesting client component.

15. (original) The system of Claim 14, wherein the network is an Internet protocol (IP) based network and the client components include initiators to encapsulate the boot requests in TCP/IP.

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16. (original) The system of Claim 14, wherein the client components perform equivalent functions based on the operating system and application files image.

17. (original) The system of Claim 14, wherein the communication component further determines an allocated one of the client image copies for each of the client components that broadcast the boot requests and provides remote access to the client components only to the allocated ones determined associated to each of the client components.

18. (original) The system of Claim 14, wherein the client components further transmit information update messages on the network and the snapshot component further independently modifies the client image copies corresponding to the transmitting ones of the client components, whereby each modified one of the client image copies differs from other ones of the client image copies.

19. The system of Claim 18, wherein the client image copies include a storage area for storing information from the base boot image and a storage area for storing information from the information update messages.